

**KWAZULU-NATAL PROVINCIAL  
POLIO ERADICATION & ENDGAME  
SYMPOSIUM**

**N H McKerrow**

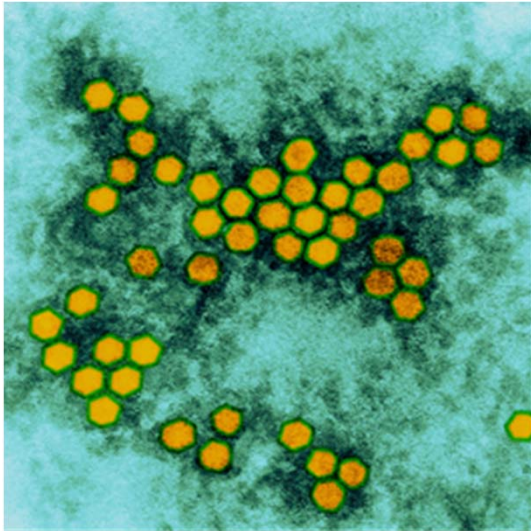
**KZN DoH**

# WELCOME

- Provincial Polio Eradication & Endgame Symposium
- Target
  - Senior managers in health services
  - Practitioners working with children
  - External stakeholders who support the KZN DoH
- To:
  - Update on Global Polio Eradication and Endgame Strategic Plan (PESP)
  - Ensure effective implementation in KZN



# POLIO



- Present in ancient Egypt 1400 BC
- 1800s sporadic cases
- 1900s epidemic proportions
  - Paradoxical rise in association with improved hygiene
- Clinical
  - 98% asymptomatic / mild viral illness
  - 1-2% paralytic
  - Death 2<sup>o</sup> to respiratory paralysis

# 20<sup>TH</sup> CENTURY FEAR

- Summer epidemics every few years
- Temporary or permanent paralysis or death
- Survivors disabled for life
- Permanent visible reminder

## Infantile paralysis

- “...the outbreaks were accompanied by a great deal of emotional terror: not the mass hysteria which characterised the black plague of the 14<sup>th</sup> century, but a quiet dread in the minds of parents who lived with the fear that at any time poliomyelitis could paralyse or kill their children.”

- Klein: *Trial by Fury: The Polio Vaccine Controversy*

# TIMELINES

- 1905 Contagious nature of polio discovered
- 1908 Poliovirus identified
  - 1950 visualized under electron microscope
- 1929 Iron lung (Drinker respirator)
- 1931 More than 1 type of polio suspected
  - 1949 3 strains identified
- 1935 1<sup>st</sup> polio vaccine trials
- 1952 Surge in polio cases
- 1955 Salk vaccine trials
- 1960 Sabine vaccine

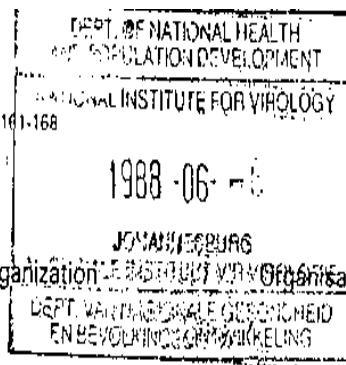


Wkly Epidem. Rec. - Relevé épidém. hebd. : 1988, 63, 161-168

No. 22



World Health Organization / Organisation mondiale de la Santé  
Geneva / Genève



# WEEKLY EPIDEMIOLOGICAL RECORD RELEVÉ ÉPIDÉMIOLOGIQUE HEBDOMADAIRE

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27 May 1988

63<sup>rd</sup> YEAR - 63<sup>e</sup> ANNÉE

27 mai 1988

## GLOBAL ERADICATION OF POLIOMYELITIS BY THE YEAR 2000

The Forty-first World Health Assembly,

Appreciating the rapid progress being achieved by the Expanded Programme on Immunization, as evidenced by coverage for a third dose of poliomyelitis, or diphtheria/pertussis/tetanus vaccines of over 50% of children under the age of one year in developing countries, as well as by the prevention of the death of more than one million children from measles, neo-

## ÉRADICATION MONDIALE DE LA POLIOMYÉLITE D'ICI L'AN 2000

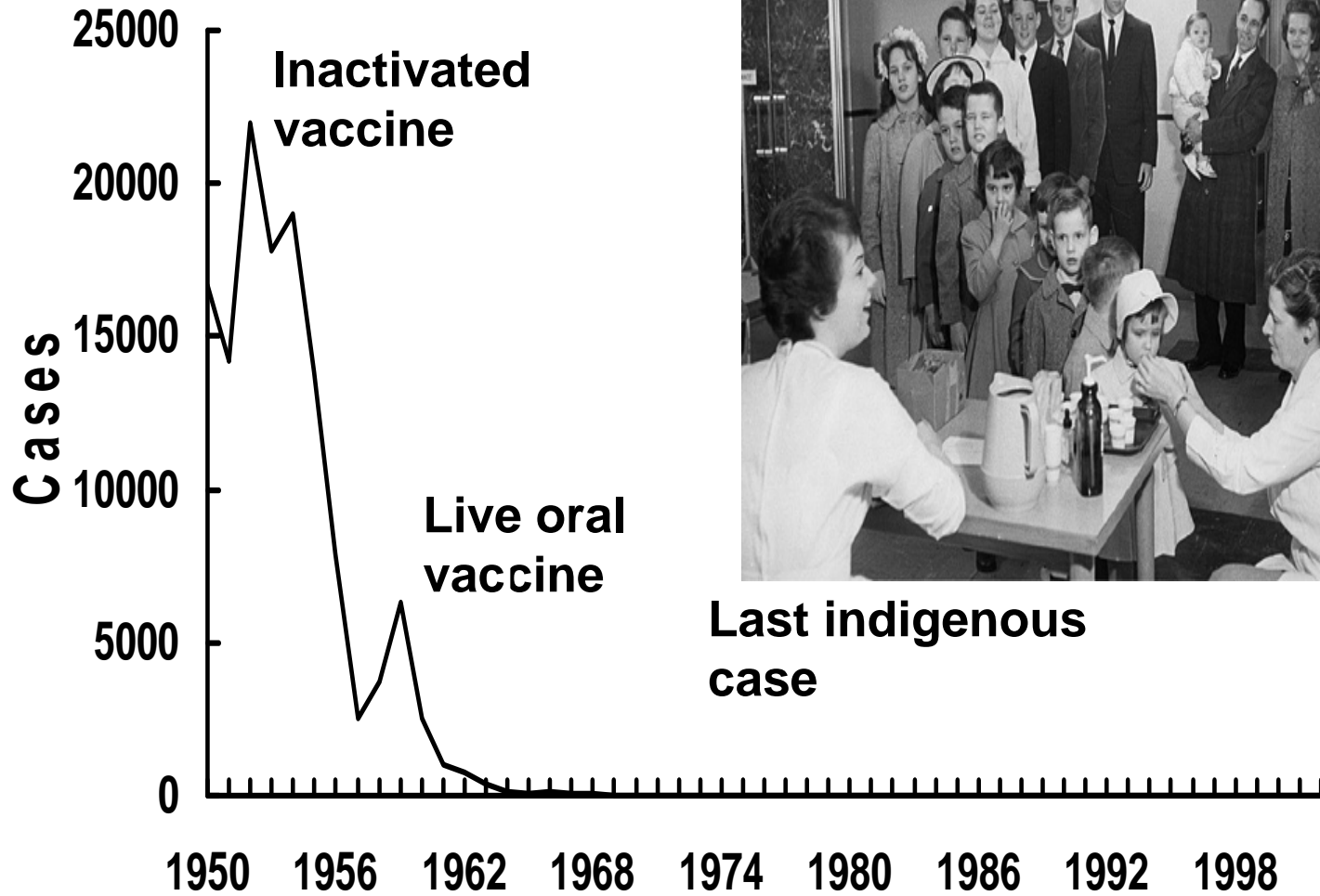
La Quarante et Unième Assemblée mondiale de la Santé,

Appréciant les rapides progrès accomplis par le programme élargi de vaccination, comme en témoignent la couverture, par une troisième dose de vaccin antipoliomyélitique ou par le vaccin antidiphthérie/tétanos/coqueluche, de plus de 50% des enfants de moins d'un an dans les pays en développement, ainsi que la prévention de plus d'un million de décès d'enfants par rougeole, tétanos néonatal ou coqueluche

- 1988 Global Polio Eradication Initiative
- 1994 Polio eliminated in the Americas
- 2000 99% reduction in polio cases
- 2002 Polio eradicated in Europe
- 2014 SE Asia polio free  
Last polio case in Africa (Nigeria)

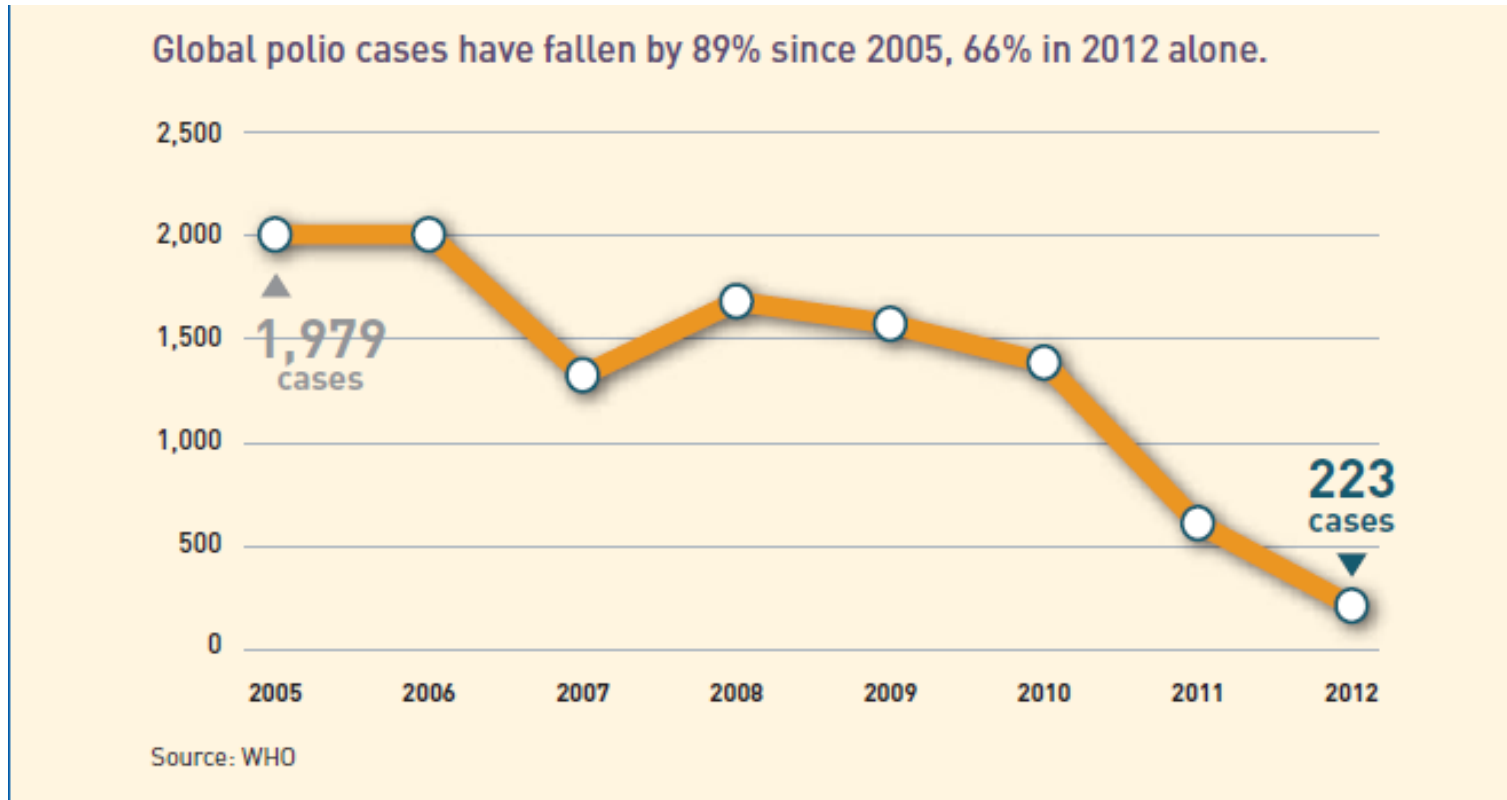


# POLIOMYELITIS IN AMERICA



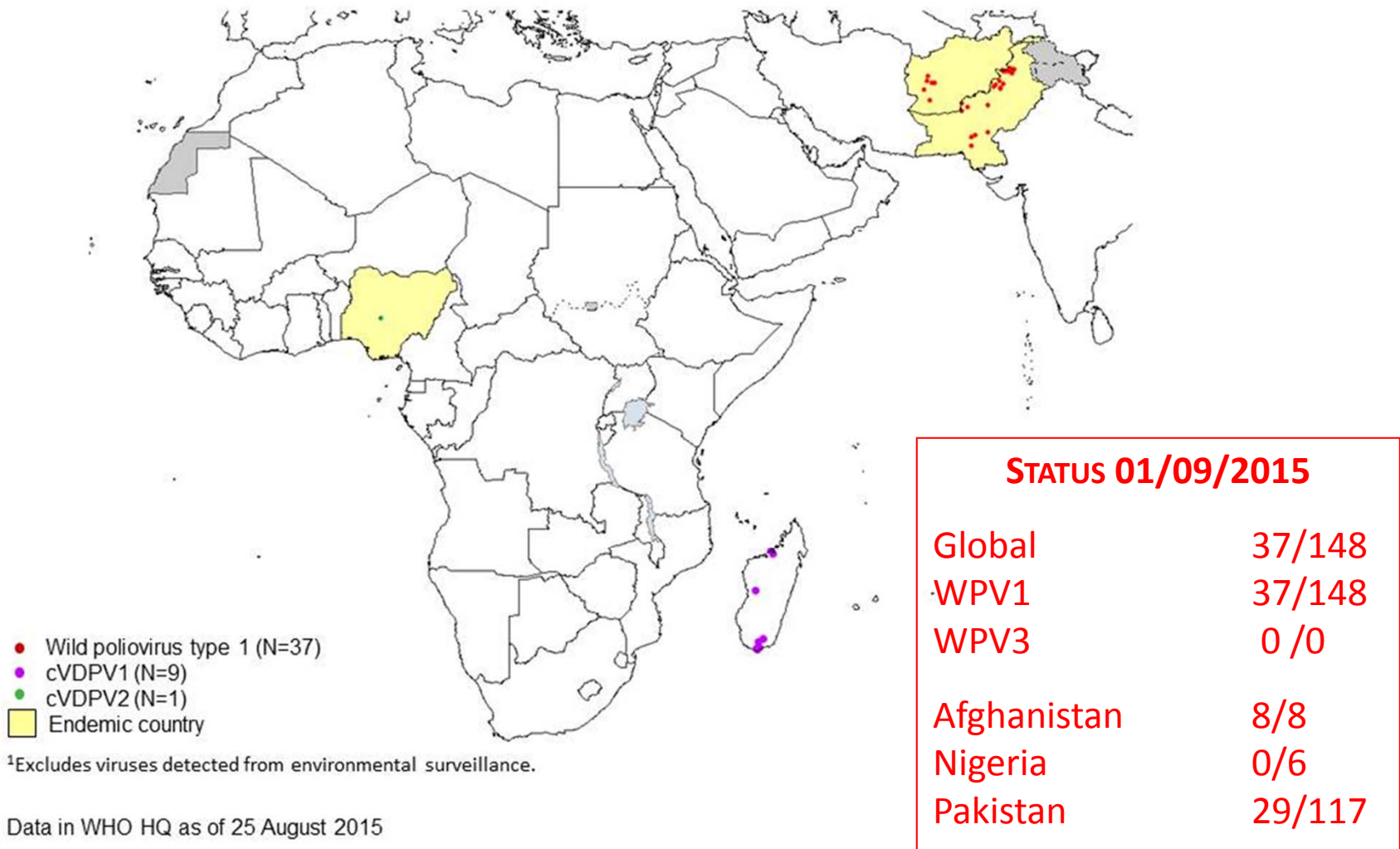
Last indigenous case

# GLOBAL DECLINE



# CURRENT STATUS

Wild Poliovirus & cVDPV Cases<sup>1</sup>, 2015  
01 January – 25 August



RSA  
1948



**RAND LAUNCHES DRIVE  
FOR FUNDS TO FIGHT  
POLIO**

*slay*  
*31. 7. 48*

**GREAT CROWDS GREET THE  
"SNOWBALL PROCESSION"  
INTO THE CITY**

**T**O-DAY MARKED THE BEGINNING of the Rand's "big push" against poliomyelitis, symbolised by a dragon, with a triumphant St. George in the act of slaying it, on a float which headed the "snowball procession" into Johannesburg from Springs.

Bands played, bunting waved, the Mayors and Mayoresses of five Reef towns, the bevy of Hollywood beauty contest finalists and Hollywood itself—in the person of Donald O'Connor—acknowledged

The scene at the City Hall this morning as the procession reached its goal after its journey along the Reef.

# POLIOMYELITIS IN SOUTH AFRICA

- Pre 1918 Sporadic cases
- 1918 First extensive epidemic - WWI
- 1944/5 Second severe epidemic - WWII.
- 1948 Severe epidemic
  - >3,000 cases
  - >200 deaths
- 1956 Neil McKerrow born into vaccinated society
- 1989 Last 3 polio cases in RSA
- 1996 RSA declared polio free
- 2015 National PEESP Summit

**20<sup>th</sup> October 1996:  
Global Certification  
Commission**

**South Africa certified polio  
free**





## Fear of vaccines helped the virus spread from Africa to Indonesia. Could it hit the rest of the world?

By JEFFREY KLUGER



MOTHERS IN THE INDO-NE-SIAN village of Cidadap don't have big dreams for their kids. Surviving infancy is often as much as they hope for, with everything else left to luck. Fikri Ramdani looked like one of the fortunate ones—active and well and, at 19

months, deep into toddlerhood. Today, however, he lies limp in his mother's arms, his eyes rolled back and his face shiny with sweat. "He used to like playing ball," says his mother Yayat. "Now he can't even stand up."

Yayat is hopeful. She tickles the boy's foot to show it still has feeling, but the foot hangs limp. It may never move again. Just last week polio was officially diagnosed in Fikri, the first Indonesian child to test positive for the virus in 10 years. Three other cases have been confirmed in the area, and hundreds of other children—some suspiciously sick already—are being examined. "The virus has probably been circulating for a month," says Dr. Georg Petersen, an on-site representative of the World Health Organization (WHO). "We can expect more cases."

The sickly village of Cidadap is not alone in its woes. Even as Americans celebrate the 50th anniversary of the Salk vaccine—the magic bullet that all but wiped out polio in the U.S.—the disease is on the march around the world. Since 2003 polio has been spreading in a fevered band across 16 countries mostly in western and central Africa and the Middle East. And with the news last week that the virus had leaped the Indian Ocean to Indonesia, other nations, including the U.S., have begun to worry about where the disease might turn up next.

What's behind the re-emergence of polio? More important, can the new outbreaks be contained and others prevented,

or is the disease truly on the loose again?

For 15 years health officials were remarkably successful in trying to eradicate polio. In 1988 there were 350,000 fresh cases of polio in 125 countries, most of them in the developing world. That year four groups—WHO, Rotary International, UNICEF and the U.S. Centers for Disease Control (CDC)—made it their goal to vaccinate polio out of existence, and with the help of private and government funding, they came tantalizingly close. By 2003, the virus was confined to six countries—Nigeria, Niger, Egypt, Pakistan, Afghanistan and India—and was seemingly headed for extinction by 2005. But nobody reckoned on the Muslim clerics in northern Nigeria.

In mid-2003, leaders of the region stopped polio inoculations after rumors spread that the vaccine could transmit AIDS and render girls infertile. It was a bad time—and a very bad place—to halt vaccines. There are now 35 million Nigerian kids under age 5, and 20% have no polio vaccinations. Says Oliver Rosenbauer, spokes-

man for WHO's Global Polio Eradication Initiative: "That's a lot of breathing space for the poliovirus to survive."

And thrive: the Nigerian case load grew from 202 new victims in 2002 to 355 in 2003, then jumped to 792 in 2004. And although vaccinations resumed last year, by then it was too late to put the genie back in the bottle. Cases of polio genetically consistent with the Nigerian strain had begun popping up, in succession, in more than 10 neighboring countries, including Chad, Cameroon, Cen-



MOUTHS OF BABES In Nigeria, center of the outbreak, millions of doses of vaccine are being given to kids younger than 5

# Polio's Back. Why Now?

tral African Republic, Côte d'Ivoire and Sudan. Last November the same virus appeared in Saudi Arabia, two months before the *hajj*, when 2 million Muslims from around the world descended on Mecca and then returned to their home countries, perhaps carrying more than just their memories with them. Investigators are still looking into the possibility that the outbreak last week in Indonesia was linked to the pilgrimage. Only a 2003 case in Lebanon is unconnected to either the *hajj* or Nigeria.

Can the spread be reversed? For now, the numbers remain relatively tiny. As of last week, the global new-case count for 2005 was still only 124. Even combined with last year's Nigerian totals, that's microscopic, epidemiologically speaking, in a world in which more than 1 million people die each year of malaria and 3 million die of AIDS. But big contagions start small. What's more, only 1 in 200 cases of polio actually causes paralysis, with the rest simply leading to fever, flu-like symptoms or no apparent illness at all. That means

that for every child with paralytic polio, 199 may be carrying—and spreading—the virus. "This is a disease that can't be controlled," says Rosenbauer. "It has to be eradicated."

Indonesia is trying. With the help of WHO, Rotary and the other groups, 5 million at-risk kids will be vaccinated in the next few weeks. The immunization rate in Indonesia is already high—90% or more—but in places like Cidadap, it's less than 50%. "The challenge is to respond quickly and make sure we get vaccine to these low-coverage areas," says Robert Keegan, deputy director of the CDC's global immunization division.

The other countries in which polio has re-emerged are getting intensive attention too. In Nigeria there are six nationwide rounds of vaccinations scheduled for 2005. In other countries, such as Yemen, Egypt and India, the immunization program is getting a boost from a so-called monovalent vaccine, which more effectively knocks out the Type 1 poliovirus circulating in those areas.

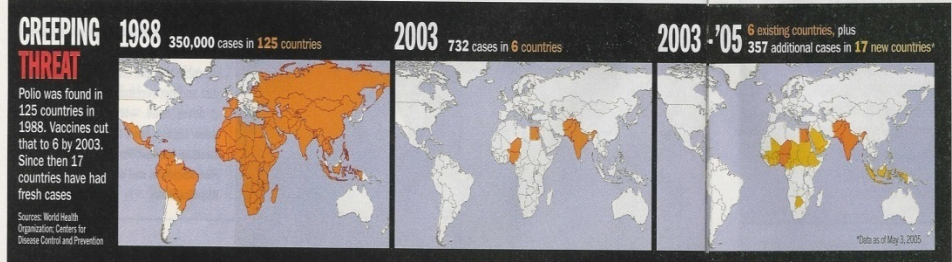
But even the best immunization campaign will leave a lot of poliovirus at large, at least for a while. WHO and other groups still hope to eradicate the disease this year in India, Pakistan and Afghanistan, where polio was endemic before the current outbreaks and good vaccination campaigns were in place. The other affected countries will take longer, giving the virus more time to spread elsewhere—including the industrialized world. In the States, officials claim not to be worried about the risk of a domestic outbreak—for now. "Our coverage rates are at all-time highs," says Keegan. "The chance of an epidemic in the U.S. is very low."

But low does not mean nonexistent, and the parents of a lot of at-risk kids all over the globe are doing nothing to reduce the danger. Look at the U.S.: Ninety-two percent of American children ages 19 months to 35 months receive three or more doses of polio vaccine, but those numbers aren't distributed evenly. Up to 2.1 million children in that age group may be either undervaccinated or entirely unvaccinated each year. Many come from poor or uninsured families with no access to health care or health information. Others are on the opposite end of the demographic arc—well-educated and comparatively wealthy families who opt out of vaccinations for their children either because they are suspicious of vaccines in general or because their religious beliefs forbid them. Home-schooled kids may be at particular risk, since their parents can sidestep the rules requiring vaccinations for all children in the U.S. public school system.

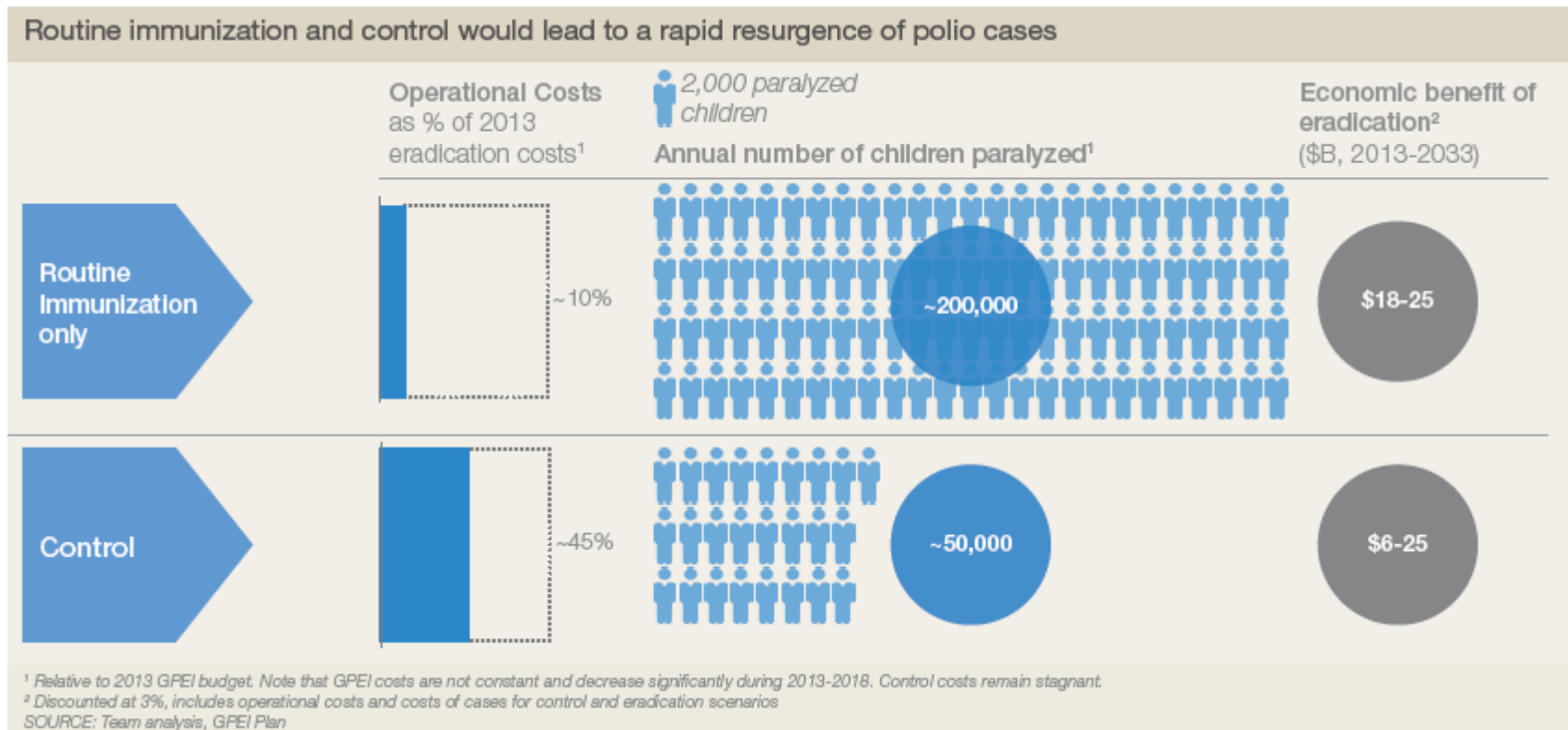
Kids left unprotected become part of a dangerous underbrush that can burn fast when a virus hits. The last polio outbreak in the States, in 1979, struck a vaccine-averse Amish community, paralyzing 14 people. That virus originated outside the country. "There are people in the U.S. who question vaccinations," says Heidi Larson of UNICEF. "But I think it's because they don't see the impact of the disease around them."

That's not a problem in the countries now struggling with outbreaks of polio and others that lie in the path of the virus. Polio could yet be snuffed out around the world, like smallpox, which was officially declared eradicated in 1980. But it will take more work in the developing world—and less complacency in the developed one—before that happens.

—Reported by Helena Bachmann/Geneva, Sora Song/New York and Jason Tedjasukmana/Cidadap

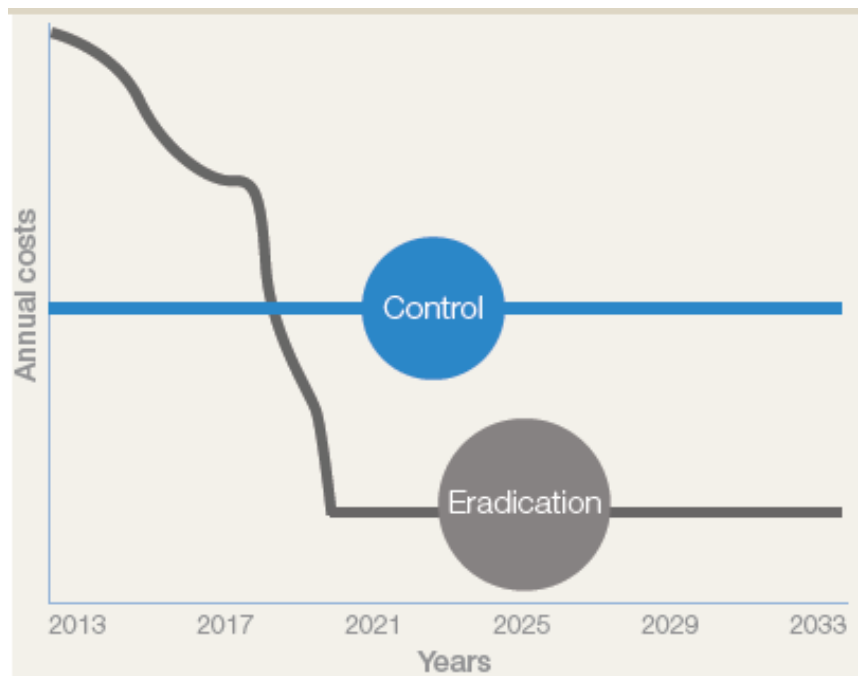


# FUTURE OPTIONS



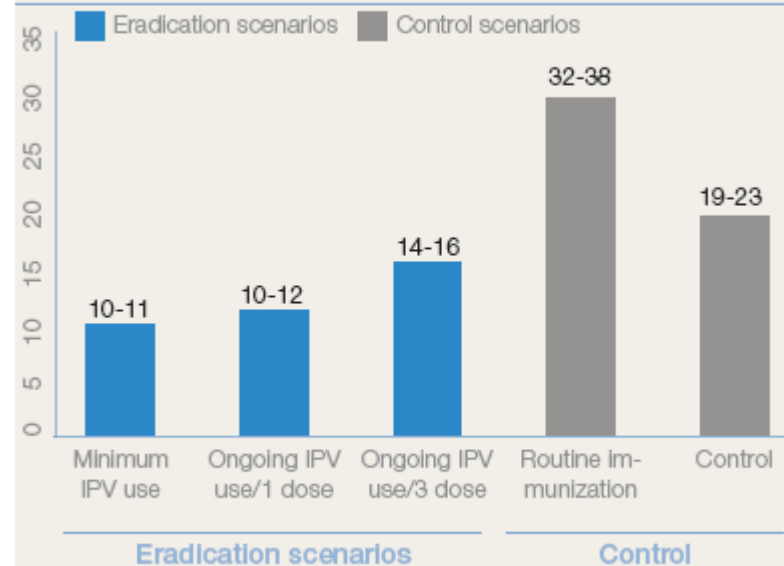


# CONTROL VS ERADICATION



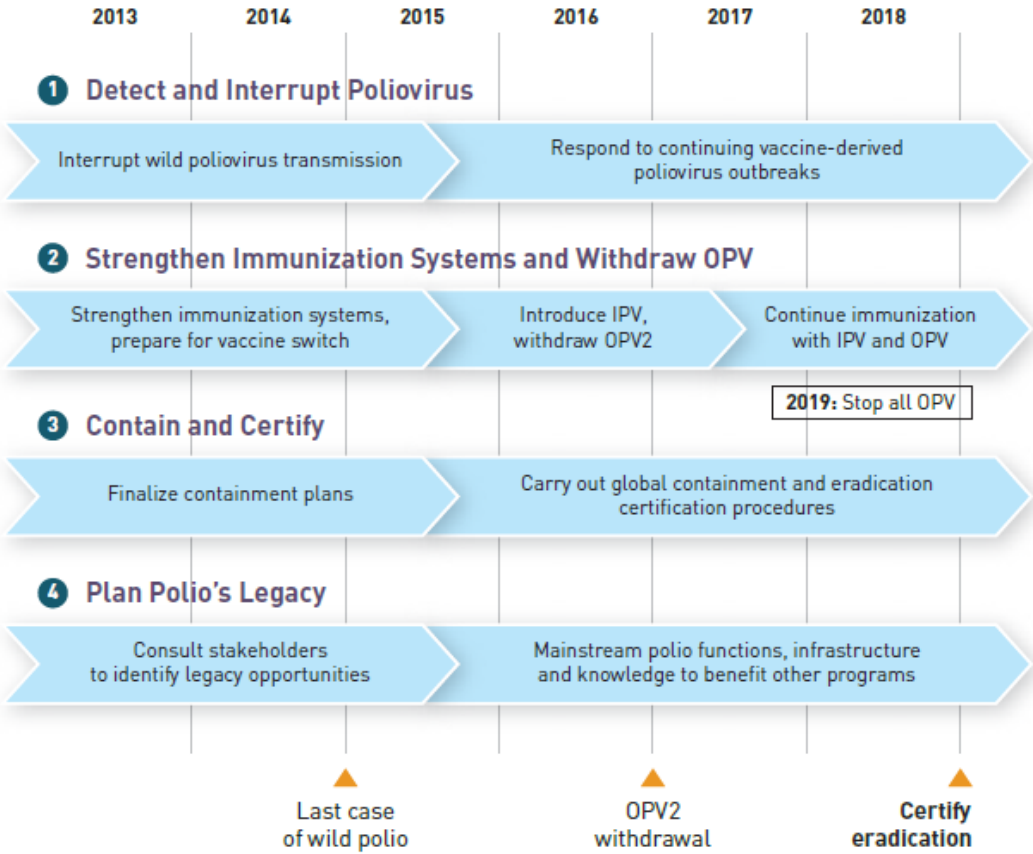
Source : Team Analysis, GPEI Plan

Total discounted cost for modeled scenarios-2013-33 (\$B, 2013)<sup>1</sup>



<sup>1</sup> Present value discounted at 3%  
SOURCE: Team analysis

# ERADICATION AND ENDGAME TIMELINE



# OBJECTIVES OF SYMPOSIUM

- To strengthen cooperation between all stakeholder for the Polio Eradication Initiative
- To provide an:
  - Update on the Global Status of Polio Eradication.
  - Outline of the Polio Eradication and Endgame Strategic Plan (PEESP) 2013 to 2018
  - Overview of the RSA implementation strategy
- To prepare health workers for the provincial roll out
  - Vaccine switch
  - Ongoing surveillance
  - Viral containment

# HOPEFULLY.....

To build a community of individuals who are:  
informed  
involved  
committed

To the Polio Eradication Agenda

And

Who will play their part in ensuring a Polio Free World.